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SECTOR 5 — CHART INFORMATION

SECTOR 5

THE COAST OF NORWAY FROM FEDJE TO ALESUND

Plan.—This sector describes the outer coast from Fedjeosen N to the approaches to Alesund. The Indreleia, or Inner Route, from Fedje to Alesund, is also described, as are the various fjords along this route.

General Remarks

5.1 Winds—Weather.—The direction and strength of the winds in any period in this sector are controlled by the prevailing depression track. The average wind strength is 11 to 27 knots, but about 10 percent of observations reach 34 to 40 knots.

Most of the strong gale force winds are from S and tend to follow the direction of the coastline. The frequency of gales increases in the N.

Winds are lighter from May to August. The direction is more variable at this time, with more frequent N winds tending to follow the coastline.

During gale force winds, a shift of the wind from S or SW to NW or N is liable to raise a heavy sea.

The unusual irregularities of the coastal topography cause large variations in the direction and strength of the wind.

Deflection and funneling increase onshore winds above the average strength. Severe katabatic squalls come down from steep mountain slopes and cause local hazards, with little warning of their approach.

There is a marked tendency for the wind to blow out of the fjords toward the open sea in winter and into the fjords in summer; however, the chain of offshore islands reduces the wind strength in some sections of the coast.

South of Ytteroyane, the weather conditions on the coast are frequently unsettled and stormy during the autumn, winter, and spring. The least rainfall is in spring and summer, and the visibility is generally good at that time. The heaviest fog occurs during the summer months.

The weather during autumn, winter and spring, on the coast between Ytteroyane and Alesund, is frequently unsettled and stormy also. At sea, the prevailing wind during this period is SW; however, close to land SE and E winds prevail. During the summer, the wind is most frequently from N to NE. The least rainfall and the clearest weather will be found during the spring and the greatest amount of fog occurs during the summer. In many of the fjords on this part of the coast, heavy squalls will be experienced from off, and in the vicinity of hills.

During the winter months, S winds prevail, changing to N in the summer. Most rain is generally accompanied with SW winds.

The amount of rain along this coast varies. The wettest places are those nearest to high mountains. Greater amounts occur at higher levels inland.

The period from September to January is the wettest while the period from April to early June is the driest. There is no set pattern of variations from normal in any particular month. The total amount of rainfall varies from year to year. Because of the

topography, the amount of precipitation in one area may differ considerably from another area within a short proximity.

Snow usually begins in October. It is most frequent in March and infrequent in April and May. There is no snowfall from June to August along the coast.

Snowstorms at the approaches to fjords and around the offshore islands may cause hazards to coastal vessels due to poor visibility and to ice forming on the superstructure as wet snow freezes.

Fog is most common with mild S to SW winds. The highest frequency of fog occurs over the sea in summer. Coastal areas exposed to those winds are often obscured, but visibility over water is normally improved when the wind veers.

Most fog in the approaches to the fjords occurs in summer, with the penetration of sea fog varying according to the degree of exposure to onshore winds. Sea fog offshore may drift over the coastline with the sea breeze as the land began to cool in the evening. Better visibility is found on the lee side of the land barriers.

Radiation fog often forms over low-lying land at the head of fjords, mostly during long clear winter nights.

Arctic sea smoke or frost smoke may form temporarily over the inner part of the fjord when extremely cold air drifts over relatively warmer water on winter nights.

Visibility is seriously restricted in snow, heavy rain, or thick drizzle. Good visibility prevails over the region for most of the time in all seasons. Mirages are reported along the coast at times.

Tides—Currents.—The tidal currents may be very much influenced by the winds and floods; in turn they may influence the general flow along the coast.

In the narrower channels between the islands, the tidal current often runs with considerable strength; because of strong currents great caution must be exercised by vessels navigating in Indreleia, the passage along the coast inside the off-lying islands and reefs.

Due to the constant coastal current, the NE flood current is usually stronger; during the rising tide there may be a set toward the islands and reefs.

The velocity and direction of tidal currents, including temporary wind influences, are described with specific fairways and ports, as required.

During settled weather, the tidal currents on the coast between Ytteroyane and Alesund set NE with the rising tide and SW with the falling tide, attaining their greatest velocity at a distance of 30 to 50 miles from the coast. During continuous W winds, the tidal currents set constantly NE with considerable velocity, especially during the rising tide.

On this part of the coast, the tidal currents set more strongly and constantly NE than in the opposite direction, especially at the distance from land mentioned above.

Statthavet has long been known as an area with very severe weather, and many have identified the area as dangerous. The depths vary from approximately 60 to 150m.

It is indicated that winds, especially from the SW to N, create rough seas. In those circumstances, the waves go straight in from the sea. The current in the waterway has been estimated at between 2 and 4 knots and when the ocean waves meet it, strong, steep waves develop and the swell becomes choppy.

Off-lying Dangers

5.2 Alwyn North Oil Field (60°48'N., 1°44'E.) is situated 86 miles W of Holmengra Light, about midway between the coast of Norway and the Shetland Islands. A drilling and accommodation platform and a production platform stand in the field.

Ninian Oil Field (60°51'N., 1°28'E.), with three production platforms, is located 8 miles NW of Alwyn Field. Lyell Oil Field and Heather Oil Field lie about 8 and 15 miles, respectively, NW of Ninian Oil Field.

Brent Oil Field (61°05'N., 1°43'E.) is situated 82 miles W of Utvaer Light and about 15 miles N of Alwyn North Field. Four production platforms, a vent structure for burning excess gas, and a moored tanker loading and storage facility stand within the field.

Hutton Oil Field, North West Hutton Oil Field, and South Cormorant Oil Field lie 8 miles W, 12 miles WNW, and 18 miles WNW, respectively, of Brent Field.

North Cormorant Oil Field (61°15'N., 1°09'E.), with a production platform, is situated about 19 miles NW of Brent Field and 64 miles NE of Muckle Flugga Light (Shetland Islands).

Tern Oil Field, Eide Oil Field, and Osprey Oil Field lie 7 miles WNW, 7 miles N, and 6 miles NE, respectively, of North Cormorant Oil Field.

Statfjorden Oil Field (61°15'N., 1°51'E.) is situated about 78 miles WNW of Utvaer Light and 7 miles NNE of Brent Oil Field. There are three production platforms and two SPM loading platforms in the field. In addition, there is an offshore loading system (UKOLS), by which a tanker is moored to a sub-surface buoy.

Gulfaks Oil Field (61°12'N., 2°12'E.), with two platforms and two SPMs, lies 10 miles ESE of Statfjorden Oil Field. Dunlin Oil Field and Snorre Oil Field lie about 7 miles W and 18 miles NNE, respectively, of Statfjorden Oil Field.

Magnus Oil Field (61°37'N., 1°20'E.) lies about 97 miles W of Ytteroyane Light and 28 miles NW of Statfjorden Oil Field.

A very large production platform stands in the field. Don Oil Field and Murchison Oil Field lie 11 and 18 miles, respectively, SE of Magnus Oil Field. Thistle Oil Field and Deveron Oil Field close W, lies 17 miles SSE of Magnus Oil Field.

Fedje to Utvaer

5.3 From the island of **Fedje** (60°46'N., 4°43'E.), the N entrance point to Fedjeosen, the channel at the N approach to Bergen, the coast trends about 19 miles NNW to Utvaer Light. Utvaer Light is located on one of the larger islets of the NW group of Utvaer Islets. This part of the coast is indented by Sognesjoen, a deep and unencumbered passage leading S of Utvaer and then E to Sognefjorden.

Between Utvaer Light and Ytteroyane Light, about 33 miles NNE, the coast is fronted by islands and rocky islets; the continuity of the inner passage is interrupted, in places, by channels leading directly in from the open sea to Indreleia.

The Ytteroyane group of islands lies within the vicinity of Ytteroyan Light. Ytteroyan Light is abreast the port of Florø.

Between Buelandet, a group of about 350 islands, islets, and skerries about 15 miles N of Utvaer Light, and Ytteroyane, there are many banks, with depths of 18.3 to 27m, which are dangerous in bad weather. Under these conditions, there is a confused sea within the 200m curve. In this area the off-lying islets are thickly interspersed with rocks completely or nearly awash. Unless a vessel is standing in to enter one of the fjords, it is advisable to navigate at least 10 miles W of the larger islands.

North of Ytteroyan Light, the coast trends for about 40 miles to the NW end of Stadlandet, one of the most remarkable promontories on the coast of Norway. This coast is also fronted by islands, islets, and rocks. Indreleia is reached through a number of channels within this area. Except when making one of the fjords, it is advisable to keep an offing of at least 10 miles W of the larger islands.

Between Buholmen Light at Stadlandet and the approach channels leading to Breisund and Alesund, the outer coast trends about 25 miles in a NE direction. The coast is indented by a number of fjords and again the mainland is fronted by many islands, islets, and dangerous rocks. The islands are high and steep on the seaward side, and the mainland backing them is also high. In places, the dangers extend a considerable distance seaward from the islands. When Breisund is approached, it will appear as a conspicuous and fairly wide opening.

The main channel of Indreleia, leading N between the N approach to Bergen and the port of Florø, continues from Fedjeosen through Sognesjoen and then through Krakhelleisund to Atleoy and Vilnaesfjorden.

From Atleoy, there are alternative routes available to vessels of moderate size; the W route passes W of Atleoy, while the E route continues through Granesund at the inner end of Vilnaesfjorden. These routes unite to the N at Stavenes Light, and the track then leads N to Florø.

5.4 From offshore, between Fedje and Utvaer, Sognesjoen appears as a wide opening in the land.

Utvaer, 30m high, and the islets close E are low, but farther E the islands of Sula are high and conspicuous, and appear to be a promontory of the mainland.

Vessels approaching the coast, intending to enter Indreleia or the fjords N of Fedjeosen, usually stand N of **Holmengra Light** (60°51'N., 4°39'E.), about 4 miles N of Fedje. The island is small and relatively high. The light tower is 16m high and is equipped with a radiobeacon and a racon. Rocks, above and below-water, extend about 1 mile W from the island. About 2 miles NNW is Bergskallen, a rock covered by 17m of water. This sunken rock is the farthest S of a chain extending about 5 miles NW of Holmengra.

Fedjefjorden lies to the SE, and Fensfjorden lies to the E of Holmengra, and leads for a distance of about 25 miles.

Sognesjoen, the approach to Sognefjorden from seaward, leads about 15 miles NE from the S end of Ytre Sula, an island



Holmengra Light

about 9 miles N of Holmengra, and E of Utvaer. Small islets lie off the entrance to Sognesjoen farther N.

The approach to Indreleia or the fjords in this vicinity N of Holmengra is usually done by keeping in mid-channel between Holmengra Light and the light over Bergskallen.

At night, enter and keep in the white sector of **Grimeskjeret Light** (60°51'N., 4°45'E.), bearing between 092° and 104°, which leads between Holmengra and Bergskallen. A racon is located at the light tower.

5.5 Pollatind (61°06'N., 4°52'E.), 542m high, situated on Sula about 11 miles ENE of Utvaer, is conspicuous. It rises gradually from a base which extends about 3 miles in a N-S direction.

On the island of Alden, about 13 miles NNW of Pollatind, a conspicuous saddle-shaped hill stretching E and W rises to a height of 480m. This hill can be seen in clear weather at a distance of 32 to 40 miles. Alden will be immediately recognized as an island.

Fensfjorden is entered between **Rongevaer** (60°49'N., 4°47'E.), 1.75 miles SSE of Grimeskjeret Light, and Roytingja, an island 2.25 miles NNE.

Fensfjorden presents no difficulties to navigation, but vessels should give both shores a fair berth and the dangers near the

entrance must be avoided. This fjord extends E and SE for 15 miles, then becomes Austfjorden, which continues SE for 15 miles; it forms the approach to Mongstad Oil Terminal. From the outer part of the fjord, several passes lead N to Sognesjoen; from its inner part Masfjorden branches NE for 12 miles. Hindnesfjorden and Vagane are arms which branch S from Austfjorden.

Krakeflui, Mefjordbaen, and Boskallane are three shoals lying in the fairway of the entrance to Fensfjorden; they lie 0.8 mile W, 1 mile WSW, and 1 mile SW, respectively, from Grimeskjeret Light.

Rongevaerskallen (60°50'N., 4°46'E.), 0.9 mile SSE of Grimeskjeret Light, has a least depth of 6m.

Fringing dangers, branch inlets, and the lights of Fensfjorden can best be seen on the chart.

Fedje Vessel Traffic System

5.6 The Fedje Vessel Traffic System (VTS) is in operation in the approaches to Mongstad and Store. Participation is compulsory for the following vessels:

1. Vessels of 200 grt and over or, when the vessels are not measured, with an loa of 24m or greater.
2. Any vessel, either pushing or pulling or being pushed or pulled, whose combined length is 24m or greater.
3. Vessels with dangerous or polluting cargo, including vessels which have carried a flammable liquid bulk cargo with a flash point lower than 23 C, and which in ballast are not gas-free.

Note.—The Coastal Directorate has the authority to apply restrictions 1 and 2 for smaller vessels.

The operational area of the VTS, the navigational fairways within this area, and the radio reporting points in this area are depicted on the accompanying graphic

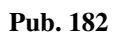
All vessels carrying dangerous cargoes or pollutant cargoes are required, as far as is possible, to navigate within the limits of the fairways. Such vessels should report their ETA at the limit of the operational area 6 hours in advance.

All vessels wishing to navigate within the operational area must obtain permission from the Fedje Traffic Center at least 1 hour before their arrival at the limit of this area.

This requirement includes vessels intending to leave a quay, berth, or mooring within the area.

When requesting permission to enter the VTS operational area, the message should include the following information:

1. Vessel name and call sign.
2. Position and time.
3. Nationality.
4. Master's name and nationality.
5. GRT.
6. Draft.
7. Destination.
8. Intended navigation channel (fairway).
9. Cargo.
10. Amount, in tons, of dangerous or polluting cargo.
11. ETA at the limits of the operational area.
12. ETA at the harbor.
13. ETD from the harbor.



Vessels should send position reports to the Fedje Traffic Center, as follows:

1. When passing the limits of the operational area.
2. When departing from a quay, anchorage, or mooring.
3. When arriving at a quay, anchorage, or mooring.
4. When passing any position that the Fedje Traffic Center may require a report to be made.
5. Involvement in and sighting any accident or abnormal operational condition.
6. As requested by the Fedje Traffic Center.

Vessels should report the following with regard to the above position reports when entering or operating in the operational area:

1. Vessels bound for a harbor within the operational area:
 - a. Name and call sign.
 - b. Adjusted ETA of passing the limits of the operational area.
 - c. New ETA at a quay, anchorage, or mooring.
 - d. New time when arriving at a quay, anchorage, or mooring.
2. Vessels leaving a harbor in the operational area:
 - a. Name and call sign.
 - b. Time when departing from a quay, anchorage, or mooring.
 - c. ETA of passing the limits of the operational area.
 - d. Time when passing the limits of the operational area.
3. Vessels navigating within the operational area from one position to another:
 - a. Name and call sign.
 - b. Time when departing from a quay, anchorage, or mooring.
 - c. ETA at a quay, anchorage, or mooring.
 - d. Time when arriving at a quay, anchorage, or mooring.
4. Vessels in transit through the operational area:
 - a. Name and call sign.
 - b. Time, position, course, and speed when passing the limits of the operational area.

5.7 Mongstad (60°49'N., 5°02'E.) ([World Port Index No. 23138](#)) is a coastal port situated on the S shore of Fensfjorden, about 8 miles within its entrance. It is the site of a refinery and is designed to handle incoming crude and to load the finished products. The port is approached through the channel N of Holmengra and from the channel SSE of Fedje.

Tides—Currents.—The tidal currents off Mongstad terminal in Fensfjorden have, in general, a constant W set, but unsettled winds may cause them to set E.

Depths—Limitations.—At the Statoil Rafinor refinery there are six jetties, including the following main berths:

1. No. 1 Quay for crude—124m long, with a depth of 38m alongside. It can accommodate vessels up to 300,000 dwt.
2. No. 2 Quay for products—69m long, with a depth of 24m alongside. It can accommodate vessels up to 35,000 dwt.
3. No. 7 Quay for crude—100m long, with a depth of 22m alongside. It can accommodate vessels up to 180,000 dwt.

Near the refinery there is a supply base for the Oseberg Oil Field. The main quay is 122m long, with depths of 11.2 to 13m alongside.



Mongstad

Pilotage.—Pilotage is compulsory for all vessels over 4,000 grt carrying dangerous cargo to and from the terminal. Pilots board, as follows:

- a. 1 mile WSW of Hellisoy Light.
- b. 1.3 miles NW of Holmengra Light.
- c. Vessels over 20,000 grt carrying hazardous or polluting cargo to the terminal:
 1. West Fedje—in position 60° 46'N, 4° 28'E.
 2. West Holmengra—in position 60° 51'N, 4° 26'E (Pilot transfer by helicopter, if required).

Pilots should be requested from the Fedje Traffic Control Center 24 hours in advance. Pilots should be contacted 2 to 3 hours in advance on VHF channel 16.

Regulations.—Tankers of 40,000 tons or more, when within territorial waters, display a black cylinder by day and exhibit three red lights, disposed vertically, at night, to indicate that other vessels must not impede their navigation.

In addition, tankers may use a sound signal of one long blast, followed by two short blasts at any time.

All vessels underway, anchored, or at a quay within the limits of the operational area should maintain a continuous listening watch on VHF channels 16 and 80.

5.8 Fedjefjorden, the continuation of Indreleia to the NNW from Bergen, leads E of Fedje to Fensfjorden and is free from dangers in the fairway. The NE side of the channel should be avoided as rocks extend about 0.7 mile offshore.

The E side of Fedje is free from dangers at a distance of about 183m.

Ytre Langoyflui (60°47'N., 4°49'E.), on the E side of the fjord, about 2 miles ENE of the E extremity of Fedje, has a depth of 3m or less, and is marked on its N end by an iron perch.

The lights and dangers in the fjord may best be seen on the chart.

Vetegjograskjaer Light (60°49'N., 4°45'E.), 2.5 miles NNE of Fedje Light, stands at the NE end of Fedjefjorden.



Mongstad

When a vessel desires to pass through Indrelia N of Fedjefjorden, vessels pass W of a 1.8m patch, marked by an iron perch, situated 0.25 mile WNW of Vetegjo Graskjaer Light; W of the dangers lying W of Grimeskjeret Light; and then into the W end of Fensfjorden.

From the W end of Fensfjorden, the deep water track leads about 15 miles N to Sognesjoen, which leads to Sognefjorden.

Caution.—Vessels crossing the cautionary area for VLCC, from seaward of Holmengra into Fensfjorden, must not impede vessels displaying signals required of tankers of 40,000 tons and larger.

Vessels desiring to pass through Indrelia N of Fedjefjorden, pass W of the 1.8m patch, described above, and then into Fensfjorden, continuing N at the outer end of that fjord.

From the NW end of Fensfjorden, Indrelia passes W of **Roytingkalven** (60°52'N., 4°47'E.), marked on its SW side by a light, and E of a light about 0.2 mile W of Roytingkalven Light. A rock, with a depth less than 1.8m, marked by an iron perch, lies on the W side of the preferred channel, 0.3 mile NW of Roytingkalven Light.

After passing the above rock, the track leads in a general N direction, passing W of the light on **Sogneuxsen** (60°57'N., 4°46'E.), into Sognesjoen, the broad deep channel forming the E continuation of Indrelia.

An alternative track from Fensfjorden to Sognesjoen turns N at **Vikingneset** (60°51'N., 4°56'E.), the SE extremity of Byrknesoy, and then passes between the island of Mjomna on the W and Sandoy on the E, about 2 miles NNE of the light on Vikingneset.

A bridge, with a vertical clearance of 30m, connects Mjomna and Sandoy, about 3.4 miles NNE of the light on Vikingneset.

5.9 Sognesjoen (60°52'N., 4°40'E.) extends about 17 miles NE to its junction with Sognefjorden, from a position about 7 miles NNE of Holmengra. The fairway is deep and has a least width of 1.75 miles.

Storsvalene and Smasvalene are two groups of islets and rocks lying off the SW entrance to Sognesjoen. The S end of Storsvalene lies about 6 miles N of Holmengra Light; the two groups then extend about 2 miles N.

An island, in position 60°56'N, 4°37'E, and marked by a beacon, lies near the S end of Storsvalene.

At the S end of the approach to Sognesjoen, on the E side, are numerous islands, islets, and rocks.

Mebaen (60°54'N., 4°42'E.), an unmarked danger with depths of less than 1.8m, is the farthest W of these dangers. It lies about 3 miles NNE of Holmengra Light. A similar unmarked danger lies about 0.2 mile N of Mebaen. These dangers are covered by the red sector of Sogneuxsen Light.



Sognefjorden

When approaching Sognesjoen from the WSW, the most prominent visible feature is the 722m high mountain **Brosviksata** (61°02'N., 5°10'E.). There is a conspicuous radio mast on the mountain. The mast is over 50m in height.

Kvaereknapp (60°59'N., 4°42'E.) is the S extremity of Ytre Sula. This extremity, on the N side of Sognesjoen, is marked by a light.

Storholmen (61°01'N., 4°47'E.) and some smaller islets and rocks lie within 0.5 mile S of Tungodden, the S extremity of Steinsundoy, 2.75 miles NE of Kvaereknapp. These dangers are covered by the green sector of Sogneuksen Light.

Guleskjer, situated 1.75 miles NNE of Storholmen, is an above-water rock in the middle of the entrance to a fjord that is mostly foul.

Gronholmen (61°02'N., 4°53'E.) lies close off the SW end of Nesoy. A light is exhibited on Gronholmen.

A light is exhibited on the SE point of Sula, 2 miles ENE of Gronholmen.

5.10 Rossoy (60°59'N., 4°48'E.), situated on the S side of Sognesjoen, 2.5 miles NNE of Sogneuksen Light, is marked by a lighted beacon. The dangers S of Rossoy are covered by the red sector of Sogneuksen Light bearing more than 197°.

Bunesholmane is situated 1 mile ENE of Rossoy Light and Hamnesholmen is situated about 0.3 mile farther E. A rock, marked by an iron perch, lies 183m N of Hamnesholmen.

A beacon stands on the NE end of Nord Glavaer, 1 mile ENE of Hamnesholmen; it marks the W side of the N entrance to Rossosen.

Dingenes (61°02'N., 5°02'E.), reported to be 4.5 miles ENE of Nord Glovaer, is marked by a light.

Islets and rocks lie within 1.25 miles to 1.5 miles W and NW of Dingenes Light. Stabben, the farthest N of these dangers, has a depth of 1.5m, and is marked by an iron perch. These dangers are covered by the green sector of Dingenes Light.

Rutletangen Light (61°05'N., 5°10'E.) is exhibited from the NE point of Fjaeroy, about 6 miles NE of Dingenes. A beacon stands on a rock close NW of the point.

Torsholmane are a group of dangers situated on two shoals on the N side of Sognesjoen, within 1 mile SW of **Hansneset** (61°07'N., 5°06'E.), the SE extremity of Losna.

When about 1 mile SSW of Kvaereknapp Light, shape a course to pass about midway between Storholmen and Rossoy.

From this position, steer to keep in the white sector of Krakeneset Light, until in a position about 1 mile SW of that light, then steer to pass midway between Krakeneset Light and Stabben.

From this position, steer in the white sector of Rutletangen Light bearing between 068° and 102° until N of Stabben and then steer a mid-channel course between the light and Torsholmane, and then into Sognefjorden, passing N and then SE of Rutletangen Light.

Caution.—The area extending from Holmengra to Sognesjoen and to Rossoy is foul with many shoals.

With an ebb tide, the current runs W. The outward current in Sognefjorden will increase significantly during the snowmelt period and during periods of heavy precipitation, which is strongest on the N side of the fjord.

Interaction between waves and current, as well as refraction of waves over shallow areas, causes choppy seas. High, steep waves have been observed in the area.

When nearing the land to the S of Utvaer, in clear weather, Eldsfjell will be seen farthest S. This is a high rounded hill on the island of Holsnoy rising to 324m, in a position about 31 miles SSE of Utvaer Light.

Utvaer to Ytteroyane (including Floro)

5.11 The lighthouses on Utvaer and Ytteroyane are 31m high and form good landmarks. Utvaer Light is equipped with a radiobeacon.



Utvaer Light

From **Utvaer Light** (61°02'N., 4°31'E.), 12.5 miles NNW of Holmengra Light, to Ytteroyane Light, a distance of about 33 miles, three fjords indent the coast.

From S to N, these three fjords are Buefjorden, Stavfjorden, and Rekstafjorden.

Buefjorden (61°15'N., 4°40'E.) is the open fjord which separates Ospa and Buelandet. The middle waters of the fjord are clear, but on both the N and S sides rocks and shoals extend well out into the fjord. North of Buefjorden, from W to E, lies Buelandet, 41m high; Vaeroy, 163m high; and Alden, 480m high.

To the S, at the N end of of Ytre Sula, are numerous islets and rocks, some of which are above water. At its end is Krakestein Light.

Gasvaer, and the groups of islands in its vicinity, are low-lying islands, islets, and rocks situated about 7 miles NE of Nordholmene, the farthest N of the Utvaer Islets. **Gasvaer** (61°11'N., 4°42'E.), the largest and highest of the islands, is 18m high,

The waterway extending from Gasvaerosen N via Buefjorden to the Geita light can be dangerous. Winds especially from W to NW cause heavy seas in the area. Rough seas and large waves come mainly from the W, and the outgoing tidal current of between 1 and 2 knots causes choppy swell. High, steep waves have been observed in this waterway.

5.12 Ospa (61°13'N., 4°45'E.), an island which rises to a height of 110m near its center, is situated on the S side of Buefjorden.

A light is located close off its NW side. This island is foul on all sides, and rocks and shoals extend about 1 mile N from the island. The islands of Drevo and Faeroy lie E of Ospa; navigation through the numerous shoals N of them is possible only with local knowledge.

Buelandet consists of over approximately 350 islands, islets, and skerries. The landscape is gentle, low, and rich in vegetation. It is located about 6 miles NNW of Gasvaer.

Foul ground extends 0.75 mile S and W from the islets. The group of islets should not be approached without local knowledge.

Loftsteingrunnen, SW of Buelandet, is a group of shoals, with depths of 15 to 17m, which can be dangerous in rough weather.

Vvryygrunnen is a group of shoals, with depths of 23 to 34m, which lies about 4 miles W of Buesteinane.

Buesteinane is conspicuous with its black color and ragged peaks.

5.13 Sandoy Light (61°18'N., 4°36'E.) is exhibited on Sandoyna and is easily identified by its close settlement and the light on its highest peak.

Vaeroy (61°18'N., 4°44'E.), 2.75 miles E of Sandoy Light, is the principal island on the N side of Buefjorden; it attains a height of 163m, and its two round knolls, of about equal size, resemble haycocks.

Islets and rocks extend about 1 mile S of Vaeroy and three islands are located in the fairway SE of that island. Geita, the farthest SE of these three islands, is marked by a light.

Directions.—The light on Geita leads from seaward into Buefjorden, clear of the dangers, to within about 2 miles of the light. Using the chart as the guide, no difficulty should be experienced in passing E of Vaeroy and S of the light on **Raudoy** (61°18'N., 4°55'E.), about 4 miles E of Vaeroy, then into Vilnesfjorden. The main track of Indreleia continues N from this fjord.

5.14 Svineflu (61°20'N., 4°33'E.), with a depth of 14m, lies at the seaward end of numerous rocks and shoals 3 miles NNW of Sandoy Light. Hasteinosen separates these dangers from the N side of Buelandet and the NW side of Vaeroy. An extensive reef, which is awash, lies 1.5 miles E of Svineflu.

Hasteinen, situated 4 miles NNE of Sandoy Light, is a dense group of small islets with many off-lying rocks.

Teinegrunnen (61°24'N., 4°29'E.), with a least depth of 13m, lies about 4 miles NNW of Svineflu. This depth is covered by the red sector of Sandoy Light bearing more than 151.5°.

Temba is a fishing ground, with a least depth of 13m, situated 4 miles N of Teinegrunnen.

Stavfjorden (61°27'N., 4°53'E.) lies E of these dangers; the main track of Indreleia leads across this fjord, then through Brufjorden to Floro.

Rekstafjorden is entered on the S side of **Kinn** (61°34'N., 4°46'E.) and can be approached from the offing by passing on either side of Jongsgrunnfalla, by keeping in the white sector of the light on Sandoya. The white sectors of the light bearing between 056° and 059°, and between 066° and 068°, lead S and N of Jongsgrunnfalla, respectively.

Indreleia continues N from the inner end of Rekstafjorden, into Nekkoyosen.

5.15 Sverslingosen, the channel between **Ytteroyane** (61°35'N., 4°41'E.) and Sverslingane, 1.25 miles N, should always be used when approaching Skorperfjorden.

Hoydalsnakken, a 13m patch, lies at the outer end of a chain of shoals extending 2 miles WSW from Ytteroyane.

Havfluene, lying at the outer end of many shoals which extend up to 3 miles WSW from Sverslingane, has a least depth of 11m.

Ternehaug (61°35'N., 4°41'E.), on the S side of the fairway, lies 0.3 mile NE of Ytteroyane; it is marked by a light.

Ertreskjert, 0.8 mile NE of Ternehaug, is easily identified; it lies on the NW edge of a group of islets and rocks which extend 0.7 mile SE.

Kvitingane, above-water, and Kvittingsfalla, awash, lie in a group of shoals on the N side of the fairway 1.5 miles NE of the light on Ternehaug.

Skallefluene (61°35'N., 4°46'E.), on the NE side of the fairway, 1 mile SE of Kvitingane, has depths of 2m or less. These rocks and a 4m patch, 0.3 mile SSE, are covered by the red sector of Kinnasund Light, situated on the NE side of Kinn, bearing more than 167°.

For vessels entering Sverslingosen from seaward, the 387m height on Skorpa in line with Ertreskjeret bearing 079° will lead to a position about 0.4 mile N of Ternehaug Light; then change course to the NE to pass 0.2 mile N of Ertreskjeret.

From Ertreskjeret steer E until the white sector of Kinnasund Light bears between 157° and 167°, which course will lead to the W end of Skorpefjorden.

Skorpefjorden, an E continuation of the entrance from Sverslingosen, is formed between Skorpa and Ytre Annoya on the N and Reksta and Nordre Nekkoya on the S. It extends about 5 miles ENE.

Flategrunnane (61°35'N., 4°50'E.), awash, lies on the S side of the fairway, 0.4 mile S of the S extremity of Skorpa. It lies at

the W end of Hestholmane, which has another rock awash, 0.3 mile ENE of Flategrunnane.

Klungreskjeret lies on the S side of the channel, 0.3 mile SW of the SE extremity of Skorpa. A light marks the E end of foul ground 0.4 mile ENE of the SE end of Skorpa.

Foul ground lies on the S side of the fairway, about 183m S of Ytre Annoya.

Annoyskjeret Light (61°36'N., 4°56'E.) is situated close off the S side of Indre Annoya and about 0.2 mile E of Ytre Annoya.

To navigate between the dangers in Skorpefjorden from W to E, bring the white sector of Annoyskjeret Light ahead, between the bearings of about 074° and 077°. Pass S of that light into Indreleia, which leads N from Nekkoyosen.

5.16 Floro (61°36'N., 5°02'E.) ([World Port Index No. 23130](#)) is an administrative town, with its principal industries primarily associated with fishing. The tidal range in Floro is about 1m.

The general depths in the harbor are 29 to 50m, although a 7.7m patch lies 0.15 mile ESE of Floro Light and a 6.4m patch lies about 160m farther E; the latter patch is marked by a buoy. Inside the mole there are two rocks, with a depth of 2.6m over them, which lie close offshore, 183m E of the mole.

Fugleskaer Terminal has about 500m of total quayage, with depths of 5.2 to 13.1m alongside. This includes a deep-sea berth 200m long. Vessels up to 6,000 dwt and coastal tankers up to 1,000 grt can be handled.

There are facilities for ferries, ro-ro vessels, and bulk vessels. In addition, there are several private wharves and a small offshore base for oil and gas industry service craft.

Pilots for Floro embark at Fedje, a distance of about 52 miles. A radio watch is maintained on VHF channels 8, 12, and 16; listening the first 10 minutes of every hour. The vessel's ETA is required 24 hours before arrival.

Anchorage in Floro is charted about 0.1 mile NE of the mole. Depths in the anchorage are about 50m.

Ytteroyane to Stadlandet

5.17 From **Ytteroyane Light** (61°35'N., 4°41'E.), the coastline extends for about 40 miles in a N direction to the NW end of Stadlandet, one of the most remarkable promontories on the Norwegian coast.

The mainland is fronted by islands, islets, and rocks, which lie up to 12 miles offshore, and is frequently interrupted by channels leading from the open sea to Indreleia. There are no off-lying islands or islets in the vicinity of Stadlandet. Except when making for one of the fjords, it is advisable to keep an offshore distance of at least 10 miles W of the larger off-lying islands.

The principal fjords along this coast are, from S to N, Hellefjorden, Froysjoen, Nordfjorden, Fafjorden, and Vagsfjorden; the latter two connect with Nordfjorden S of Stadlandet.

The most important lights for making a landfall between Ytteroyane and Stadlandet are **Ytteroyane Light** (61°34'N., 4°41'E.), **Kvanhovden Light** (61°42'N., 4°50'E.), and **Hendanes Light** (61°58'N., 5°02'E.), on the W side of Vagsoy, and

Krakenes Light (Kraakenes) (62°02'N., 4°59'E.), on the NW extremity of Vagsoy.

The most conspicuous island among the islands in the vicinity of Ytteroyane is **Kinn** (61°34'N., 4°46'E.). It is 316m high and lies 2 miles ESE of Ytteroyane Light. This dome-shaped island has two hills separated by a deep ravine with steep sides. On the N end of the island there is a church which is visible at a distance of 8 miles.

During the winter months, with long nights and frequent bad visibility, when approaching the land during W winds, vessels should avoid being set N of the entrances to the channels.

Skorpa, about 3 miles ENE of Ytteroyane Light, rises to a height of 393m. The island of Batalden, 1.5 miles NNW of Skorpa, rises to a height of 491m.

From offshore, W of Floro, **Alden** (61°19'N., 4°48'E.) should be visible to the SE and Kinn should be visible to the E.

Batal Den, a good landmark 4 miles N of Kinn, is 491m high and precipitous.

5.18 Sendingane (61°39'N., 4°34'E.), a group of above-water rocks, and Loynefallet, a 4m shoal, 0.6 mile WSW, lie 5.75 miles NW of Ytteroyane, at the W end of a chain of rocks extending W from Batalden.

Bremangerlandet (Bremangerland), an island which rises to a height of 910m at **Hornelen** (61°51'N., 5°14'E.), appears to be part of the mainland.

Stadlandet projects NW from the mainland E of Vagsoy for a distance of about 14 miles. **Kjerringa** (62°11'N., 5°08'E.), at the NW end of Stadlandet, is 497m high. Radio masts, which are prominent, stand near the summit of Kjerringa.

The waterway near Haugsholmen and Stalrevet, a shoal with a depth of 20m, as well as several shoal areas between them, have been mentioned as areas with particularly heavy seas.

5.19 Skorpefluene and **Bataldfuene** (61°54'N., 4°48'E.), with a least depth of 10m, lie 5 and 4.5 mile SW, respectively, from the N extremity of Bremangerlandet. These two dangers, which break when a swell is running, are the farthest W in the approach to Fafjorden and Vagsfjorden. Veststeinen, an islet 44m high, lies 2.75 miles W of the N extremity of Bremangerlandet. The islet is surrounded by foul ground to a distance of 0.6 mile.

Toytemulen, awash and always marked by breakers, lies 1.25 miles NNW of Veststeinen. There is a 5m patch 0.3 mile NNE of this rock.

Several dangers lie in the general area between Veststeinen and Klovningen. Seiabaane, with a least depth of 4m, lies about 2 miles NNE of Veststeinen, and Brunebaen, a rock, awash, lies about 2 miles ENE of the same islet.

Several shoals, which reportedly break in a swell, lie S of Brunebaen. Their positions may be seen on the chart.

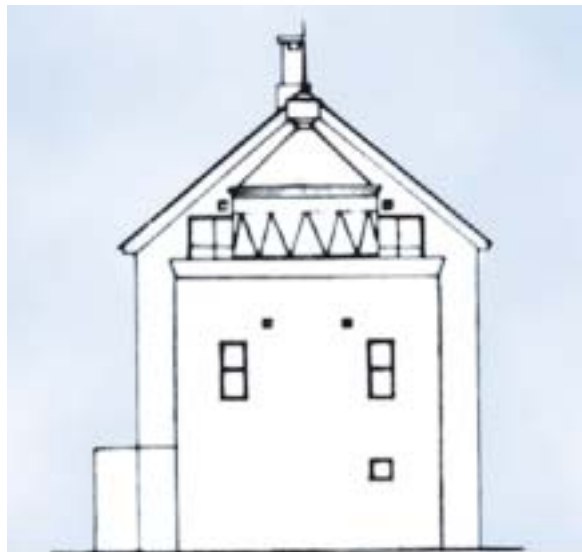
Harfluene, with a least depth of 19m, lies about 2 miles NW of Klovningen. Between this patch and the islet is Norefluene, covered by a least depth of 8m. Klovningsskjer, which covers 1.5m, lies at the NNW end of the foul ground 0.3 mile from the N end of Klovningen.

Skoringane, a chain of small islets, lies 0.5 mile E of Klovningen. Svarteskjera are above-water rocks 0.3 mile farther E.

5.20 Basundskjera (61°56'N., 5°00'E.), a group of above-water rocks marked by a light, lies on the N side of the approach to Vagsfjorden, in a position 0.75 mile NW of Hovdeneset Light.

Mehuken, in the NW part of Vagsoy, is 433m high and steep on its N side.

Havfruskallen (62°03'N., 4°51'E.), a 4.5m shoal, lies 3.75 miles WNW of the NW extremity of Vagsoy.



Krakenes Light

Vessels making for the open sea S of Kraka can alter course when Krakenes Light is open N of Skongenes Light and bearing about 271°. The white sector of Skongenes Light, bearing astern, leads between Torsflu and **Noreskallen** (62°03'N., 4°52'E.), 2.75 miles WSW.

The white sector of this light, astern, leads between Kraka and Melsfluene, and about 0.5 mile SW of Oddeskallane, a 12m depth, 2 miles NW of Kraka. When Svinoy, about 7 miles NNE of the N end of Stadlandet, is open W of the NW extremity of Stadlandet bearing about 030°, course should be altered NNE.

5.21 Hellefjorden, a passage extending from seaward in a SE direction to Indreleia and Floro, leads SE from the approach to Froysjoen. The islands of Aralden and Batalden lie on the SW side of the seaward entrance to the fjord and Hovden lies on the NE side. Hellefjorden is about 7 miles in length and 1.75 miles in width at its narrowest part.

On the N side of the approach to Froysjoen are many dangers; some of them break. These dangers extend to a distance of about 3 miles S and 8 miles W of Froya. Shoals also extend about 8 miles W of the entrance to Hellefjorden, on the S side of the approach to Froysjoen.

From **Aralden** (61°41'N., 4°46'E.), the NW entrance point of Hellefjorden, shoal water extends about 0.7 mile N; vessels must keep well clear.

From the offing, vessels can stand in toward Frojsjoen through a deep channel clear of all dangers, with Skarekina, the 310m high hill on the NW end of Hovden, bearing 090°.

The white sector of Kvanhovden Light, close W of Skarekinna, leads from seaward through the fairway to within 1 mile of the light.



Kvanhovden Light

The inner part of Hellefjorden is free from dangers in the fairway except for **Risholmflua** (61°38'N., 4°53'E.), awash, on the W side of the fairway about 3 miles NW of Stabben Light, and two shoals. The two shoals have least depths of 9.4 and 11m. They lie in the fairway about 1 and 2 miles SE, respectively, from Risholmflua.

To enter the N end of Hellefjorden, steer in the white sector of Stabben Light. This course will lead close W of Dombeskjaerene Light, which is situated on the SW side of Hovden.

When near Stabben Light, steer S in the white sector of Nekkoyosen Light and continue S into Indreleia or steer E in the white sector of Floro Light and proceed to Floro.

Skarekinna (61°42'N., 4°51'E.) attains an elevation of 310m on the NW part of Hovden. Hovden lies 1.25 miles NE of Batalden; they are separated by Hellefjorden. Froya rises to a height of 379m, 5.5 miles N of Skarekinna.

5.22 Froysjoen is a deep channel about 15 miles long and not less than 1 mile wide. The tidal currents usually set E and N with the rising tide and W and S with the falling tide. Froysjoen may be entered from seaward or from the S through Indreleia.

The approach from the offing may be the same as that directed for Hellefjorden. When within 1 mile of Kvanhovden Light, steer in a NE direction in the white sector of Smorhavn Light. When within 1.5 miles of that light, steer a mid-channel course in a NE direction.

The passage from Floro to Froysjoen through Hellefjorden is the preferred track. However, a passage for vessels of moderate size leads N through Naeroyfjorden, then into Froysjoen. The channel through Naeroyfjorden, though more protected, is much obstructed by shoals.

Naeroyfjorden lies between Sore Naeroy and Nordre Naeroy, on the W side, and the mainland. The S entrance is about 2 miles NNE of Stabben Light.

Vessels running for Naeroyfjorden from Floro alter course N, after passing S of Floro Light and enter the white sector of **Arebrottneset Light** (61°38'N., 5°00'E.). This track will lead W of Sandvoeret, 1.25 miles NW of Floro and Naeroyflua, a 6m shoal 0.5 mile WNW.

When NW of Sandvoeret, enter the white sector of **Dragjaskjaerflu Light** (61°39'N., 4°59'E.) ahead, which leads between Nordre Naeroy and the dangers on the E side of the fairway. A vessel may steer in the white sector of the light 1 mile N of Dragjas Kjaerflu Light. This also leads through the channel and E of Dragjaskjaerflu Light. When NE of Dragjaskjaerflu Light, alter course NW and bring that light astern showing white.

This track leads E of **Hollendarane** (61°41'N., 4°56'E.), awash, and Rognane, 1.5 miles farther N, and into the white sector of Smorhavn Light; the track then leads into Froysjoen.

Between **Fiskholmen** (61°46'N., 4°56'E.) and the entrance to Berlepollen, 6.5 miles ENE, the fairway of Froysjoen is defined by the white sector of Smorhavn Light, situated on the SW extremity of Fiskholmen, bearing between 240° and 332°, astern, which marks the N shore. The S edge is marked by **Olaskjaer Light** (61°44'N., 4°57'E.).

When abeam the Berlepollen entrance, keep within the white sector of Hornelen Light bearing between 061° and 078°, ahead. When not less than 0.5 mile from Hornelen Light, alter course to the E until in the white sector of **Haukedalsholmen Light** (61°52'N., 5°16'E.), which leads between the E coast of Bremangerlandet and Maroy, 0.5 mile E, and into the E entrance of Skatestraumen.

Skorperauva (61°46'N., 4°40'E.), a 6.5m shoal, lies at the W end of several rocks and dangers extending WSW from Froya. A 19m patch lies 1 mile W of this shoal; a depth of 24m is charted 2.5 miles farther WSW.

Skorpefluene (61°55'N., 4°46'E.), the W rocks off the NW side of Bremangerlandet, have a least depth of 5m, and are sometimes marked by breakers.

Vetrunge (61°56'N., 4°49'E.), a group of rocks partly above water, lies 1 mile NNW of Toytemulen. Fallet, covered by a least depth of 2m, lies 0.6 mile N of Vetrunge.

Klovningen (61°56'N., 4°57'E.), an islet, 84m high, surrounded by foul ground, lies just over 1 mile N of the N extremity of Bremangerlandet. Both Veststeinen and Klovningen can be distinguished from a distance of 10 to 12 miles.

5.23 Maloy (61°56'N., 5°07'E.) ([World Port Index No. 23125](#)) is situated on the SE side of Vagsoy. It is a center of the fishing industry. There are several quays in the harbor. The Inter-Comtermnalen is the main quay and includes two deep-sea berths, 159m long and 127m long, with depths of 8.1 to 13.1m and 7 to 10m, respectively, alongside. A local traffic quay is 40m long, with a depth of 8m alongside. There are facilities for ro-ro vessels. The fishing harbor has a pier, 110m long, with depths of 10 to 17m along both sides, and a quay, 206m long, with depths of 10 to 12m alongside.

Anchorage may be taken, in 30 to 40m, sand and mud or rock, about 0.1 mile off the quays. Anchorage is prohibited in the fairway E of a line joining Maloy N light and

Goteberghamaren (61°57'N., 5°08'E.), a point 0.6 mile N, and W of a line joining the N light on the E side of Maloysundet to Trolleboflu light.

Ulvesund, between Vagsoy and the mainland, leads N for 4 miles to Sildegapet, and has few dangers. There is a speed limit of 10 knots in the central and N part of the channel.

5.24 Ulven Light (61°58'N., 5°09'E.) is exhibited from a pile of rocks in the center of Ulvesund, about 2 miles N of Maloy.

At Hagevik, 0.3 mile ESE of Ulven Light, there is a quay, with a depth of 6m alongside. On the opposite shore at Barstadvik there is a quay, 110m long, with depths of 5 to 8m alongside.

There are lights, in range, which lead to Olvesund from the N.

The usual track of Indreleia is on either side of Trolleboflu, then into the white sector of Ulven Light, passing on either side of that light. When passing through Ulvesund, vessels keep about 91m from Trolleboflu and Ulven. North of Ulven the shore should not be approached nearer than 183m. The dangers and lights in Ulvesund are best seen on the chart.

From Ulvesund, several channels lead through Sildegapet to the open sea.

Seaward bound vessels in Sildegapet can pass through the southernmost channel between Breidflu, a 10m bank about 2 miles W of **Skongenes Light** (62°02'N., 5°08'E.), and Melsfluene, 0.25 mile NE. Skongsnes Light is situated on the NE extremity of Vagsoy.



Skongenes Light

Further N, vessels can pass through the channel between Melsfluene, which has a least charted depth of 11m, and Kraka, which is well above water.

It is reported that the channels S of Kraka should be used only in fine or moderate weather. A 16m bank, which breaks in heavy weather, lies NW of Kraka.

A broad channel leads N between Kraka and the shoals extending SW from Stadlandet. Ramseflu, an 8.6m patch, lies at the S extremity of these shoals, about 2 miles SSW of the SW extremity of Stadlandet.

5.25 Torsflu (62°04'N., 4°57'E.), a small isolated bank with a charted depth of 13m, lies 2 miles NNW of Krakenes Light. This bank, which occasionally breaks in bad weather, should be avoided.

In bad weather, northbound vessels should always stand out to sea through the channel between Kraka and the dangers off Stadlandet.

From a position about 0.5 mile SW of Ulvesund Range Light, vessels can steer about 021° until Ulvesund Range

Lights, in line astern, lead between the fringing dangers on either side of the fairway to the seaward channel N of Kraka.

This course passes about midway between Toren and **Ytstebaan** (62°09'N., 5°04'E.), with a depth of 5.5m, situated 1.25 miles off Stadlandet. Ytstebaan breaks in bad weather.

When W of Ytstebaan, about 1 mile distant, steer a N course to pass W of **Bukketjuvane** (62°11'N., 5°04'E.) about 0.5 mile distant. Bukketjuvane is a partially submerged reef lying about 1 mile SW of the NW extremity of Stadlandet.

Vessels can proceed N past Bukketjuvane until Dollstein, a hill at the W end of Sandsoy, about 7 miles ENE of Stadlandet, bears about 067°, when course can be altered NE for the N end of Skorpa, to pass N of Stadlandet, then into Vanylvgapet and Indreleia.

Buholmen Light (62°10'N., 5°05'E.) is off the W side of Stadlandet, on the SE islet.

Stadlandet to Alesund

5.26 The coast from **Stadlandet** (62°12'N., 5°08'E.) to Alesund is indented by fjords and is fronted by many islands, islets, and dangerous rocks. This section is about 25 miles long and runs in an ENE direction. The appearance of the coast is rugged, bare, and gray. The two main openings are Vanylvgapet, on the NE side of Stadlandet, and Breisunddjupet, NE of **Runde** (62°25'N., 5°35'E.).

Thes summits of **Sauehornet** (62°14'N., 6°09'E.), 1,303m high, 28 miles E of Kjerringa, on Stadlandet, and Slogen, 1,564m high, 15 miles farther ESE, may be used in the approaches from seaward, and on the fishing grounds farther seaward.

Statthavet (62°12'N., 5°06'E.) has long been known as an area with very severe weather, and many have identified the area as being dangerous.

It has been indicated that heavy sea is created particularly by winds from SW to N. In these cases, the waves come straight in from the ocean. The current in the passage has been estimated at between 2 and 4 knots, and when the ocean waves meet this current, strong precipitous breakers are developed.

The swell becomes choppy.

The passage near Haugsholmen and the shoal of Stzlrevet, as well as several small shoal areas between these, have been mentioned as areas with particularly heavy seas.

The currents on this part of the coast, irrespective of the tide, usually set in a NE direction and are known to have a velocity, at times, of more than 1 knot. At a distance of 30 to 60 miles from land, a vessel will be set to the NE.

Pilots cruise NE of Runde; vessels enroute to Alesund or Bergen may embark a pilot here. During N gales, the pilot may be forced to seek shelter at Nerlandsoy.

5.27 Sandsoy (62°15'N., 5°26'E.), lying 5.5 miles ENE of Stadlandet, rises to a height of 370m. There is a height of 227m, shaped like a haystack, at the W end of the island. This height is easily identified from SW or NW, but merges into the background when viewed from the W.

Numerous dangers extend up to 2 miles W of Sandsoy. The farthest NW of these dangers is **Skjeggene** (62°16'N., 5°20'E.), a group of rocks with a least depth of 0.5m over its N end; they are usually marked by breakers.

A group of shoals, with a least depth of 24m, lies about 3 miles W of Skjeggene.

Svinoy (62°20'N., 5°16'E.), 6 miles W of Skorpa, is easily identified by its remote position although it is comparatively small. A light is shown from a tower 11m in height, standing on the SE side of the island. Due to numerous dangers, the passage between Svinoy and Skorpa should not be attempted without local knowledge.

Skorpa (62°20'N., 5°30'E.) and Nerlandsoy, close NE and 4 miles NE of Skorpa, respectively, stand out clearly from the background.

Juklebaen (62°22'N., 5°24'E.), a 2m patch lying 4.25 miles ENE of Svinoy, usually breaks.

Heroyfjorden lies between Sandoya and **Gurskoya** (62°15'N., 5°40'E.), on the S, and Skorpa, **Nerlandsoy** (62°21'N., 5°33'E.), and **Bergsoya** (62°20'N., 6°38'E.).

Goldnes Light (62°22'N., 5°34'E.) is situated on the N extremity of Nerlandsoy, 4.25 miles ENE of Juklebaen.

Geitmaren, a 5m patch, lies 1.75 miles NNW of Goldnes Light. The sea occasionally breaks over it in quiet weather, though seldom during calms or offshore winds.

5.28 Rundoy Light (62°25'N., 5°36'E.) is situated on the NW extremity of Runde (Rundoy), 2.5 miles NNE of Goldnes Light. Numerous dangers extend 1.75 miles ENE from a rock, awash, 0.9 mile NW of Rundoy Light. Some of these dangers are above-water.

Langenes Light stands on the NE extremity of Runde. A line of rocks and islets extends from Treholmane, 0.6 mile E of Langenes Light, to Grasholmen, 3 miles NE. The sea sometimes breaks over a spit, which extends 0.5 mile ENE from Grasholmen and terminates in Breiflu, an 8m patch.

Grasoyane Light (62°26'N., 5°46'E.) stands on Grasholmen.

The channels through the dangers between Langenes Light and Grasoyane Light are navigable only with local knowledge.

Florauden Light (62°26'N., 5°50'E.) is situated on the central islet of Florauden, a group of islets lying 2 miles E of Grasholmen. A racon is located at the light tower.

5.29 Breisundet (62°27'N., 6°00'E.), between Hareidlandet on the S and Godoya, gives access from the sea to Alesund and Indreleia. It is deep and clear of dangers except close inshore.



Alesund Harbor

Vessels entering Breisundet steer for a position 1.5 miles N of Florauden; a mid-channel course will then lead to a position 0.7 mile NW of Eltraneset, the NW extremity of Sula.

Heissafjorden leads E from this position to Alesund. Sulefjorden leads SE from the above position.

Hogsteinen Light (62°28'N., 6°02'E.) is situated off the SE extremity of Godoya, on the NE side of Breisundet.

5.30 Alesund (62°28'N., 6°10'E.) ([World Port Index No. 23120](#)) is situated on the islands of Norvoya, Heissa, and Aspoya. These islands are interconnected and are also connected to the mainland by fixed bridges. The waters of Alesund Havn comprise the harbor at Alesund.

Alesund is a major commercial and fishing port. Products include clothing and dairy products, as well as furniture and fish products. It has a population of about 37,000 people.

Depths—Limitations.—There are quays at Storneskaaien, Prestebryggen, and Skutevikkaien, on the S side of Alesund that are 42 to 220m long with depths of 5.1 to 16m alongside.

The largest vessel to use this port was 69,000 grt, with a draft of 10m.

There are four tanker berths, with depths up to 12.2m alongside; a ro-ro berth, 85m long, with depths of 6 to 14m; alongside and a fishing quay, 330m long, with depths of 4 to 6m alongside.

The port area has mooring facilities for the lay-up of vessels of all sizes. Vessels up to 508,000 dwt have been accommodated at lay-up here. The port is open year round.



Alesund Havn

Vessels may, draft permitting, transit the channel which lies between Aspoya and Heissa. There is a least depth of 5m in the channel, but depths of 4.2m are charted near the range line.

A fixed bridge, with a navigable width of 50m and a vertical clearance of 17m, spans the channel. The port is open all the year.

Pilotage.—Pilotage is compulsory for merchant vessels, both in and out of the inner harbor.

Pilots board in Breidsundet, in position 62°27'N, 5°59'E, weather permitting; by request, the pilot can also board in Breidsunddjupet, in position 62°31'N, 5°41'E.

When entering into or departing from the pilot boarding position in Breidsundet, vessels are requested to navigate inside the Recommended Fairway, bound as follows:

- a. 62°31.8'N, 5°44.4'E.
- b. 62°30.2'N, 5°45.8'E.

- c. 62°27.5'N, 5°55.1'E.
 - d. 62°27.5'N, 5°57.2'E.
 - e. 62°26.5'N, 5°57.2'E.
 - f. 62°26.5'N, 5°53.5'E.
 - g. 62°29.5'N, 5°43.3'E.
 - h. 62°29.5'N, 5°38.2'E.
 - i. 62°31.8'N, 5°44.4'E.
- The pilot station should be called 2 or 3 hours prior to arrival on VHF channel 16.

Regulations.—Within the harbor area of Alesund, previously described, the following regulations are in effect:

1. Within the harbor area, powered vessels are not to exceed the minimum speed required for good seamanship and maneuverability, or to proceed at such a speed as to cause damage or danger to vessels or harbor installations from wash.
2. When, near the entrance to Indre Havn or Steinvagsundet, a risk of collision exists between incoming and outgoing vessels, the incoming vessel must wait at a suitable distance off the entrance until the outgoing vessel is well clear of the breakwater at Indre Havn or of the lights in Steinvagsundet.
3. In Indre Havn, Skutevika, or Steinvagsundet, vessels are not permitted to swing to their anchors, or to anchor in such a way as to obstruct the harbor entrances or the approaches to alongside berths.

Signals.—Signals are exhibited at night, from signal masts on Skanskaien and Storneskaien, using fixed red, green, and white lights to give berthing instructions and to indicate an arriving vessel's berth. Such signals should be acknowledged by a blast on the whistle. The berth signals are given in the accompanying table.

By day, a red flag is displayed at the berth allocated to the vessel.

The general night signals are, as follows:

Signal	Meaning
Fixed red, green, and white	All berths occupied.
Flashing red	Continue into harbor.
Flashing green	Anchor and await orders.
Flashing white	Close to hailing distance.

Indreleia and the Inner Fjords

5.31 Indreleia is a navigable inner route and is, to some extent, protected by offshore islands. The route is continuous from Fedje to Alesund. At times it extends to near the coast.

Sognefjorden, the continuation of Sognesjoen E from **Rutletangen** (61°05'N., 5°10'E.), is the longest and deepest fjord in Norway. The inner recesses of the fjord are more than 100 miles from the open sea, but in few places is it as much as 2.5 miles wide. The mountains rise almost vertically from the water's edge in many places, and exceed an elevation of 1,800m near Aurlandsfjorden, where their summits are always covered with snow. There are numerous waterfalls and cascades, and the scenery is grand, but somber.

The principal branches of Sognefjorden are Aurlandsfjorden and Naeroyfjorden, on the S side; Fjaerlandsfjorden, Sogndalsfjorden, and Lustrafjorden, on the N side; and Ardalsfjorden, an extension of Songnefjorden, at the E end.

The tidal currents in Sognefjorden usually set W and run strongest along the N side; they are, however, irregular and may be found setting W under one shore and E under the other.

In the middle of the entrance the current is rotary, counterclockwise, and weak; the spring rate in all directions is 0.25 knot.

There are few anchorages in Sognefjorden, but at the heads of nearly all the branches there are banks formed by the deposit from the various rivers that flow into it. These banks, consisting generally of soft mud or sand, afford excellent holding ground, but they are continually changing in shape and increasing in size.

Sognefjorden is fringed with a number of towns, the most important one being Ardal at the head of Ardalsfjorden.

5.32 Bofjorden (61°07'N., 5°20'E.), situated on the N side of Sognefjorden, close within its W entrance, affords anchorage to vessels of moderate size. Vessels anchor 0.25 mile NNE of the light, in 30 to 40m, good holding ground. An iron perch, reported 0.15 mile WNW of the light structure, marks a rock off the E edge of a bank. A light is exhibited from a rock 0.2 mile N of the anchorage.

A bay at **Vikum** (61°10'N., 5°43'E.), on the N side of Sognefjorden about 22 miles E of Bofjorden, is one of the better harbors for vessels of moderate size in this fjord.

Vessels anchor in the N part of the bay, in about 30 to 40m, clay. There is a quay in the bay, with depths of 4 to 5m alongside.

Hoyanger (61°13'N., 6°04'E.), situated at the head of Hoyangsfjorden, 10.5 miles ENE of Vikum, is an industrial town and an administrative center. There is a mooring buoy off the largest quay, which has a least depth of 8m alongside.

Pilotage is compulsory; special arrangements for a pilot should be made through Fedje Pilot Station.

Alesund—Berth Signals			
	Quay 1	Quay 2	Quay 3
Skanskaien	One green	One green and one white (at W end)	One green and one white (at E end)
Storneskaien	One red	Two red	Three red
Prestebryggen	One green	Two green	—
Skutevikkaien	One white	Two white	Three white

5.33 Ardal (61°14'N., 7°43'E.) ([World Port Index No. 23136](#)) is a coastal harbor situated at the NE extremity of Ardalsfjorden. This ice-free port is directed by the Bergen Customs District.

There are a number of quays in the port. Quay I is 220m long and has a depth of 9.25m alongside. Quay II is 100m long and has 11.5m alongside. The largest vessel that can be accommodated is 220m long with a 9.6m draft.

Pilotage is compulsory. Unless otherwise arranged beforehand, vessels from abroad must call at Bergen for inward clearance.

Vessels, when in transit of Rekstafjorden from the WSW, may, when within 0.75 mile of **Sandoya Light** (61°33'N., 4°46'E.), alter course to the E to pass 0.25 mile S of that light.

When E of Sandoya Light, steer in its white sector, astern, and continue to the E end of Rekstafjorden and enter the white sector of Nekkoyosen Light, as directed above, which leads into Nekkoyosen.

5.34 The better Indrelia track for large vessels passes from the E end of Sognesjoen, and then turns abruptly N leading through Krakhellesund between the islands of Sula, on the W, and Losna.

Klauva Light (61°07'N., 5°02'E.) is situated on the SW extremity of Losna and on the E side of the S entrance to Krakhellesund.

A light is situated on the W side of Losna, about 2 miles NNW of Klauva. A light is situated on a rock on the W side of Krakhellesund, 0.5 mile farther NNW.

An overhead cable, with a vertical clearance of 70m, crosses Krakhellesund about 1 mile NNW of Klauva Light.

The channel of Krakhellesund, about 5 miles long, is free of dangers in the fairway, except for a rocky patch lying 183m SSE of the salient point on the W side of the S entrance and a reef lying close off the rock marked by a light about 2 miles N. The tidal currents in the channel nearly always set N.

Klauva Light, showing white, leads N from Sognesjoen into the entrance of Krakhellesund. The white sector of the light situated on the rock on the W side of the channel leads through the fairway of the S part of the channel.

After passing E of this light, vessels can keep in the white sector of the light, astern, which will lead W of the island Skorpa then into Afjorden.

Losneosen, between the E side of Losna and the mainland, connects Sognesjoen and Sognefjorden with Krakhellesund through Tollesund, which separates Losna from Skorpa. Losneosen connects with Afjorden through Storakersundet E of Skorpa.

These channels are deep and free of dangers. An overhead cable, with a vertical clearance of 70m, crosses the SE end of Tollesund.

Afjorden trends about 6 miles ESE from its confluence with Storakersundet, and branches into Hylestadfjorden and Sorfjorden, at its head.

5.35 Sakrisskjer (61°14'N., 4°57'E.) is the NW entrance point of Afjorden. From the W end of Afjorden the track of Indrelia takes a N direction past the W sides of the islands Sakrisoy and Lutelandet, and Lammetu. From the W end of

Vilnesfjorden the direction is E through that channel to the W end of Dalsfjorden, then N into Granesundet.

A light is situated on Sakrisskjer.

Midtfjordskjer (61°16'N., 4°54'E.), marked by a light, is situated in the S entrance to Vilnesfjorden, 3 miles NNW of the light on Sakrisskjer. Araldeflu is a 4m patch 0.25 mile N of Midtfjordskjer.

Morpolsa, a rock, awash, is situated at the extremity of the foul ground extending W from Lammetu. It lies about 0.7 mile ENE of the light on Midtfjordskjer.

Ytste Taren (61°17'N., 4°55'E.), a 5m shoal, lies 0.3 mile N of Morpolsa.

Vessels enroute from Krakhellesund to Vilnesfjorden can keep in the white sector of the light on Sakrisskjer until about 1 mile from the light. Vessels may then steer W to pass S of the light and then enter the white sector of the light on Raudoy. This sector will lead W of Morpolsa and E of Midtfjordskjer, into the SW entrance Vilnesfjorden.

5.36 Vilnesfjorden is a broad channel which extends about 4 miles E from the light on Raudoy.

Haskallen (61°18'N., 4°57'E.), with a least depth of 14m, lies in the fairway just over 1 mile ESE of Raudoy Light, and close S of the dangers E of Raudoy.

Einingsflu, lying on the S side of the fairway 1 mile SSE of Haskallen, has a depth of 2.3m.

Mokallasset (61°18'N., 5°01'E.), a reef, awash, is situated on the N side of the fairway, about 1 mile W of Vilnesfjorden Light. There is an 11m patch 0.25 mile SW of the beacon situated on Mokallasset. Several rocks and shoals lie between Mokallasset and Atloy.

Vilnesfjorden Light (61°18'N., 5°04'E.) is situated on the S side of the E end of Vilnesfjorden.

Vessels in transit of Vilnesfjorden from W to E may steer in the white sector of Vilnesfjorden Light to within 0.5 mile of the light. Haskallen lies in this sector. The white sector of Langenes Light, 1.25 miles NNE of Vilnesfjorden Light, leads S of Flatoyflu, then into the white sector of Vilnesfjorden Light, astern, which leads to the S entrance of Granesundet.

Dalsfjorden continues ENE from Vilnesfjorden for 17 miles to the vicinity of Bogstad.

5.37 Granesundet, separating the E side of the island Atloy from the mainland, is about 4 miles long and has a least width of 0.25 mile. It is nearly free of danger in the fairway.

Flatoyflu (61°19'N., 5°03'E.), awash, lies 0.3 mile S of Flatoy in the SW approach to Granesundet. It is marked by two iron perches.

Flatoy, an islet at the S end of Granesundet, lies on the W side of the entrance 1 mile N of Vilnesfjorden Light. The islet is surrounded by a shore reef to a distance of about 0.1 mile

Langenes Light is situated about 0.8 mile E of Flatoy; another light is situated on the SW side of Prestoy, 0.45 mile NNE of Flatoy. Both of these lights are on the E shore of Granesundet.

A depth of 9.5m lies nearly in mid-channel about 0.3 mile WNW of Langenes Light. A 12m patch lies 0.15 mile WSW of the light on Prestoy.

Englandsflu is a 4m patch situated on the W side of the fairway, 0.8 mile NW of the light on Prestoy.

Granebaen (61°23'N., 5°01'E.), a 3.5m shoal, lies on the W side of the fairway in the N entrance to Granesundet.

A light is exhibited on Trettenes, on the E side of the N end of Granesundet.

Vessels entering Granesundet should keep in the white sector of Vilnesfjorden Light, astern, until it intersects the white sector of the light on the W side of Prestoy, which will lead between the dangers in the S entrance of Granesundet. Alter course to the NNW when the white sector of Langenes Light, astern, bears between 118° and 122°. Continue in this sector until the white sector of the light on Trettenes bears between 350° and 356.5°. Alter course to the N to keep in this sector which leads through the fairway of Granesundet, into the white sector of the light on Prestoy, bearing astern, which leads between Trettenes and Granebaen.

The white sector of Trettenes Light, bearing astern, leads toward Stavfjorden.

An alternate route from the W end of Vilnesfjorden to Stavenes Light, is to pass through Aldefjorden, W of the island of Tvibyrgje and Tussen Light and then to the E on the S side of Heggoyane.

Aldefjorden, the passage between Alden and Tvibyrgje, is situated on the E and S sides, respectively, of these islands.

5.38 Midfjordflu (61°19'N., 4°49'E.), a 10m patch, lies 0.8 mile SW of the SW point of Tvibyrgje. Senholmtaren, an unmarked 4m shoal, lies about 0.6 mile ESE of Midfjordflu and an 8m patch marked by a buoy lies 0.5 mile N of Midfjordflu.

There are other dangers in Aldefjorden which may best be seen on the chart.

Alden is saddle-shaped and rises to a height of 480m in its E part. Tvibyrgje lies about 1 mile NE of Alden and about 0.5 mile W of Atloy. The island resembles two haycocks; the one farthest W is 192m high.

Tussen (61°23'N., 4°50'E.) lies 1 mile N of Tvibyrgje. It is marked by a light and a beacon. A reef projects about 183m NW from Tussen; a 14m bank lies 0.3 mile W of the light.

Heggoyosen is the channel between Heggoyane on the N and Atloy on the S. A light is shown from the S extremity of Heggoyane, in a position about 3 miles ENE of Tussen.

A light is shown from the NW extremity of Raudoy, an island lying 1 mile E of Heggoyane, and on the W side of the N entrance of Granesundet.

5.39 Vessels from the S desiring to pass through the W part of Vilnesfjorden then into Aldefjorden may do so by keeping in the white sector of the light on **Raudoy** (61°18'N., 4°55'E.) as previously suggested, until within 0.5 mile of that light, when course should be changed to the NW.

With the white sector of the light on Raudoy, astern, proceed until within the white sector of the light on Geita. Navigate with Geita Light, astern, which leads W of Midfjordflu and the 8m patch 0.5 mile N of it, until abeam of Tussen, about 1 mile distant. A 14m depth is charted 1.25 miles W of Tussen Light.

To enter Heggoyosen from the white sector of Geita Light, steer in the white sector of the light on Raudoy, passing no less than 0.25 mile N of Tussen Light. When the white sector of Stavenes Light bears between 017° and 032°, steer in that sector to clear the dangers N of Raudoy and E of Heggoyane.

This course will join the track leading NNW from the N entrance of Granesundet.

Kjerringholmen (61°24'N., 4°58'E.), an islet 19m high, lies W of the fairway leading NNW from Granesundet and E of the fairway leading NNE from Heggoyosen, in a position 0.45 mile N of Raudoy. The islet is surrounded by shoal water to a distance of 183m. Melsholmen, an islet 21m high, lies 0.6 mile NW of Kjerringholmen.

Stavenes Light (61°25'N., 4°59'E.) is situated on an islet on the E side of Indreleia, in a position 1.75 miles NNE of the light on Raudoy.

From Stavenes Light, the main track leads across Stavfjorden between **Baane** (61°29'N., 4°59'E.) and Trefotskjeret, about 0.6 mile E; it then leads between Askrova Light, on the E end of the island Askrova, and Leieskjera, about 0.1 mile SSE.

This narrow passage has a least charted depth of 14m and should be navigated with caution.

5.40 Folvagfluene (61°25'N., 4°58'E.) is a group of rocks, awash, which lies on the W side of Indreleia, 0.5 mile SW of Stavenes Light. Faneskjera, above water, lies on the same side of the track, within 0.25 mile N of Folvagfluene.

Ryggene, reefs marked at their E end by a buoy, are situated 0.75 mile NNW of Stavenes Light.

The white sector of Stavenes Light, bearing astern, leads across Stavfjorden from a position E of Ryggene; the white sector of **Askrova Light** (61°31'N., 5°00'E.) then leads through the fairway E of Baane. An 11.5m patch lies on the E limit of this sector 0.2 mile WSW of Trefotskjeret.

When within 0.2 mile of the light, alter course NNE to pass between it and Leieskjera, and then into Brufjorden.

Oddane (61°33'N., 5°00'E.) is marked on its E extremity by a light. Andalsskjera, 1.25 miles NE of Oddane, is also marked by a light.

5.41 To continue across Brufjorden, from a position close E of the light on Askrova, steer N with the white sector of this light bearing more than 179°, astern, and keep the light on Andalsskjera ahead, which leads E of Oddane.

When entering the white sector of **Nekkoyosen Light** (61°35'N., 4°57'E.), alter course NW to keep in this sector, which leads NE of Oddane and out of Brufjorden to the entrance of Nekkoyosen.

Nekkoyosen, a continuation of Indreleia, is entered between Sore Nekkoya and **Nordre Nekkoya** (61°35'N., 4°56'E.), on the W side, and Faeroya and Faeroykalven, on the E side.

Mortingbaen, 1 mile NNE of Nekkoyosen Light, is marked by a light. It lies on the E side of the channel. Annoyholmbaen, with depths of 2m or less, lies on the W side of the fairway 0.3 mile SW of the light on Mortingbaen.

Stabben Light (61°36'N., 4°57'E.) is situated on the E end of foul ground, in a position just over 1 mile NNE of Nekkoyosen Light. There is a least depth of 3.4m on the foul ground WSW of the light.

Grasskjeret Light is situated on the W part of a reef, about 0.3 mile ENE of Stabben Light.

5.42 Floro Light (61°36'N., 5°01'E.) is situated on the N side of the channel, 1.25 miles E of Grasskjeret Light. A 6m patch lies 183m W of the light.

Vessels en route through Nekkoyosen to Floro keep Stabben light structure bearing about 005°, which leads between Nordre Nekkoya and Faeroya. Enter the white sector of Nekkoyosen Light, astern, which will lead W of Mortingbaen.

When NW of the light on Mortingbaen, enter the white sector of Floro Light. When within 0.35 mile of Floro Light, steer a mid-channel course between the light and the shoal water about 183m to the S,. This course will lead into Floro.

An alternate track from Nekkoyosen for approaching Floro is with the white sector of Nekkoyosen Light bearing astern. It leads between Mortingbaen and Svartskjeret, marked by a beacon, which is situated 0.3 mile E of the light on Mortingbaen, into the white sector of Grasskjeret Light, then into the white sector of Floro Light as indicated above.

Froysjoen

5.43 Vessels may approach Fafjorden and Vagsfjorden by keeping in the white sector of **Hovdeneset Light** (61°56'N., 5°01'E.), which leads N of Skorpefluene, Bataldfuene, and Veststeinen, and S of Toytemulen and Seiabaane to within about 3 miles of the light.

Vessels heading for Fafjorden then enter the white sector of Kvitnes Light, which leads to the white sector of Fafjorden Light. Enter the white sector of Fafjorden Light ahead, which leads into Fafjorden.

Vessels approaching from the NW may keep the summit of **Ronelden** (61°55'N., 5°01'E.), a steep conical hill 321m high, in line with the summit of Klovningen, bearing 115°, which passes NE of Fallet and SW of Harfluene and Norefluene.

When E of Fallet, steer in the white sector of Kvitnes Light and proceed as directed above.

Vessels approaching the entrance from the N should keep Hornelen, the 889m hill on the E end of Bremangerlandet, bearing about 124°. When N of Klovningen, alter course S and enter the white sector of Fafjorden Light.

Care must be taken to avoid Jokkulflu, an 11m depth, 0.7 mile NNE of Klovningen.

Alternative routes lead, respectively, N and S of Jokkulflu and then between Basundskjere and Svarteskjera.

5.44 Fafjorden, a narrow inlet, is the farthest S of two seaward entrances to Nordfjorden. It leads between Bremangerlandet and Husevagoy and connects with Vagsfjorden by a shallow channel at the E end of Husevagoy. Farther E is the channel that leads N from Froysjoen.

Ribba (61°54'N., 5°00'E.), awash, lies on the W side of the fairway 0.6 mile WSW of Kvitnes Light; between this danger and the shore to the S are some above and below-water rocks.

Spenfluene, situated on the N side of the fairway 0.4 mile S of Kvitnes Light, consists of a group of sunken rocks, awash, at their E end.

To transit Fafjorden, keep the white sector of Fafjorden Light ahead, which leads between the dangers of Ribba and Spenfluene. When about 0.3 mile distant from Fafjorden Light, steer a mid-channel course in an ESE direction and pass on either side of Bjornoy, an island 2.5 miles ESE of Fafjorden Light. The white sector of **Skaten Light** (61°52'N., 5°13'E.) leads through the fairway N of Bjornoy; another white sector of the light leads S of Bjornoy.

Approach to Vagsfjorden

5.45 When E of Bjornoy, a vessel may continue E and join Indreleia and proceed through Skatestraumen or proceed N to Nordfjorden by passing between the islands of Gangsoy and Risoy. When vessels pass between these two islands, they should keep in mid-channel, favoring the W side of Risoy, which is steep-to.

Vagsfjorden leads between Husevagoy and Vagsoy into the W end of Nordfjorden. It also is the S entrance to Maloy, a port on the SE side of Vagsoy.

Gasholmen (61°55'N., 5°06'E.), a reef-fringed islet, lies on the S side of the fairway in a position about 3 miles ESE of Hovdeneset Light. An unmarked patch, with a least charted depth of 6m, lies on the N side of the channel 0.5 mile NE of Gasholmen.

Bergsholmane Light is situated on the N side of the channel, 0.9 mile E of Hovdeneset.

Vessels that have approached Vagsfjorden from the W with the white sector of Hovdeneset Light ahead steer in the white sector of Bergsholmane Light, which leads to within 0.5 mile of that light.

The white sector of Hovdeneset Light, astern, and the white sector of Bergsholmane Light, astern, lead N of Gasholmen into Indreleia, which leads SE, passing E of Gangsoy, and continues N and, E of Vagsoy through Ulvesund.

Nordfjorden

5.46 Nordfjorden, entered N of Risoy, is approached from seaward through Fafjorden or Vagsfjorden. It extends E of Risoy for a distance of about 50 miles under various names. The main fjord has several branches, most of them extending S, that provide several anchorage areas.

At the seaward end of Nordfjorden, the shores are barren and rugged, but farther inland there is often a narrow coastal terrace, with scattered farms and forest. The fjord is deep and practically free from dangers.

The first reach of Nordfjorden extends to the vicinity of Asneset, situated 8 miles ENE of Risoy.

Allmenningsfluene (61°54'N., 5°16'E.), marked by a light, is situated on the N side of the fairway in a position 2.5 miles ENE of Risoy. These rocks are covered by less than 1.8m of water.

Skorpeholmane, a chain of islets and rocks, lies on the S side of the fairway, 1 mile ENE of Risoy. Etreskallen, with a least depth of 5.5m, lies on the S side of the fairway, 0.6 mile S of Allmenningsfluene.

A light is situated on **Asneset** (61°56'N., 5°28'E.). Good anchorage with sand bottom can be obtained near the head of the bay at Maurstad, 0.7 mile N of Asneset. Care must be taken to avoid a 6m shoal 0.8 mile NW of the light on Asneset.

5.47 From Asneset, Nordfjorden continues ESE for 19 miles to **Anda** (61°51'N., 6°05'E.).

Davika, on the S side of the fjord, is entered 2.75 miles SE of Asneset. It affords good anchorage, in depths up to 26m, sand and stones.

Eidsfjorden extends 7 miles E from Davikfjorden. Winds from W raise a considerable sea in this branch.

Anchorage with sand bottom can be obtained in a cove W of the river mouth at Starheim, on the N side of Eidsfjorden, 2 miles within the entrance. At Starheim, there is a quay with depths from 4 to 6m alongside.

Nordfjordeid (61°54'N., 5°59'E.), at the head of Eidsfjorden, is an industrial and administrative town.

Anchorage, with a bottom of sand, can be obtained 183m WNW of the head of the mole. There are depths of 5 to 7m alongside the quay situated inside the N end of the mole.

Isefjorden, a continuation of Nordfjorden, is entered 7.5 miles ESE of Asneset; it extends 3 miles SE.

Alfoten, entered S of **Hjelteneset** (61°51'N., 5°47'E.), extends 4.5 miles WSW from the main fjord; its head ices over.

Hundvikfjorden, the continuation E from Isefjorden, is entered between Hjelteneset and Krokeneset, 0.8 mile ENE.

At Yksenelvane, on the S side of this reach 1 mile S of Krokeneset, the larger of two quays has depths of 9 to 14m alongside.

Hyen, entered E of **Hyenese** (61°51'N., 5°59'E.), extends 7 miles SSW from Hundvikfjorden.

Gloppen, entered W of Anda, branches SE from Hundvikfjorden for 6 miles. The head of Gloppen affords spacious anchorage, in depths of 20 to 50m. Care should be taken to not anchor near the submarine cables E of this berth.

Ufjorden, the continuation of Nordfjorden E from Hundvikfjorden, is entered N of Anda.

Innvikefjorden, the next reach E of Utfjorden, affords anchorage off **Innvik** (61°51'N., 6°37'E.), in depths of 30 to 40m. A quay at this village has depths of 5 to 6m alongside.

Faleidfjorden, the last reach of Nordfjorden, is entered about 2 miles NW of Innvik, and extends 7 miles E to its head.

Good anchorage can be obtained about 0.6 mile N of the church at **Olden** (61°50'N., 6°49'E.), in 50 to 60m, clay.

Off Loen, the village at the head of the bay, there is good anchorage, in 15 to 20m, sand and clay.

5.48 Skatestraumen, the continuation of Indreleia from Froysjoen, leads between the SW side of Rugsundoy and Bremangerlandet to Fafjorden; it is about 3 miles in length in an E-W direction.

Hornelsflua (61°52'N., 5°16'E.), on the N side of the fairway 0.25 mile WSW of Haukedalsholmane, has a least charted depth of 1m.

Kalveholmen Light is situated on the N side of the fairway, 1 mile WNW of Hornelsflua; Skaten Light is situated 0.3 mile farther W. Shrukken, a rock, lies 183m SE of Skaten Light.

A light is situated on the SW extremity of Risoy, a little over 1 mile WNW of Skaten.

In Skatestraumen, the current is usually W during the falling tide, with a rate up to 3 or 4 knots, and during the rising tide, with a rate of 2 knots. Current conditions are irregular, as wind and weather can greatly influence both direction and rate.

Vessels may enter Skatestraumen from the S by steering in the white sector of Kalveholmen Light, then steering in the white sector of Skaten Light until SW of Kalveholmen Light. Then steer to pass N of Skaten in the white sector of Risoy Light or in the white sector of Kalveholmen Light, astern; this leads N of a 7.5m patch close ENE of Skaten. The white sector of Risoy Light leads over this patch.

After passing N of Skaten, bring the white sector of this light astern; this leads S of Bjornoy into Fafjorden. Another sector of this light, bearing astern, leads into the white sector of the light on the E end of Gangsoy. This light ahead leads to the fairway between Gangsoy and Risoy.

After passing Risoy, the track leads W into Vagsfjorden and then N through Maloysundet, the entrance to Ulvesund. The channel of Indreleia lies on the E side of the island of **Maloy**.

5.49 After passing between Risoy and Gangsoy, steer for **Vemmelsvikholmen** (61°54'N., 5°10'E.) until Gasholmen bears 305°, when course may be altered toward that island to bring the light on Gangsoy astern, which leads between Gasholmen and the unmarked patch on the N side of the channel. Vessels then continue NW in the white sector of Bergsholmane Light.

Kariskjer Light (61°55'N., 5°07'E.) is situated on a point 0.75 mile NNE of Gasholmen.

A light is situated on the S extremity of Maloy, 0.45 mile NNW of Kariskjer Light.

Maloysundet is the channel between the island of Maloy and the mainland and is the approach, from S, to the port of Maloy.

Maloysundet is spanned by a bridge, and is divided into two separate channels by the central pillar. The W passage has a vertical clearance of 42m over a width of 23m, or of 40m over a width of 76m. The E passage has a vertical clearance of 41m over a width of 50m. The W channel has a least charted depth of 10.5m and the E channel has a least charted depth of 7m.

Lights are exhibited on both sides of the bridge to indicate the center of each passage.

The flow in Maloysundet usually sets N on both the flood and ebb. The strongest rate is about 1 hour before HW. During springs, with a S wind, the rate is reported to reach 3 knots.

Pilotage is compulsory. The pilot boards off **Homengra** (60°51'N., 4°37'E.) or **Breisundet** (62°27'N., 5°59'E.).

Between Maloysundet and Leistholmen, there is a speed limit of 6 knots, but larger vessels may proceed at 8 knots to improve steering if wind and current conditions make this speed necessary. In Maloysundet itself, vessels may adjust speed as necessary for safe steering.

Stalrevet, 0.6 mile N of the N extremity of Stadlandet has a least charted depth of 29m. It breaks in heavy weather to a distant of 1.25 miles ESE, which is an area of foul ground.

Barskallen, about 1 mile WSW of Kvamsoy, has a least depth of 28m. **Svarteskjaer** (62°11'N., 5°21'E.), a reef above and below water, lies about 0.5 mile NW of Haugsholmen Light, on the NE side of the channel.

When making Vanylvs gapet from W or NW, pass N of Stalrevet and enter the white sector of Haugsholmen Light ahead. When about 0.3 mile NW of Svarteskjaer, steer S to pass about midway between Haugsholmen Light and the islets off the NE side of Stadlandet.

The white sector of **Terneskerflu Light** (62°11'N., 5°24'E.) leads into the channel between Storholmen and Haugsholmen. When the two lights marking the W end of the channel are abeam, course may be adjusted to pass clear N of Terneskerflu Light, then into Haugsfjorden.

Anchorage, in depths of 11 to 25m, is charted 0.35 mile WNW of Terneskerflu Light.

5.50 Haugsfjorden is formed between Stadlandet, Storholmen, Kvamsoy, and Haugsholmen, on the W and NW sides, and by the mainland, on the E side.

Ytsteflu (62°12'N., 5°27'E.), awash, lies about 0.3 mile offshore, 1.75 miles NE of Terneskjerflu Light.

Aramsund Light (62°12'N., 5°29'E.) is situated 2.75 miles NE of Terneskjerflu Light, in the W entrance to Aramsundet. The white sector of this light leads from a position close N of Terneskjerflu Light, across the N end of Haugsfjorden and N of Ytsteflu. Two 10m patches lie in this white sector.

Aramsundet leads from Haugsfjorden E to Rovdefjorden.

The channel is marked by Aramsund Light, at the W entrance; Stabbane Light, in the E entrance; and a third light about midway between these two.



Stabbane Light

To enter Aramsundet, vessels, after passing Ytsteflu, should steer to pass S of the 6.5m shoal lying about 0.4 mile WNW of Aramsund Light, then between this light and the wreck and 9m depth 0.15 mile NE. Then course may be shaped to pass W and S of Stabbane Light. Larger vessels may pass N of the iron perch 183m NW of Stabbane Light and S of Raedene, a reef awash, 0.15 mile N of the light. This track leads over a 7.5m depth.

Rovdefjorden extends about 3 miles SE from Stabbane Light to **Saudeholmen Light** (62°11'N., 5°36'E.), then ENE to the entrance to Voldsfjorden. Vartdalsfjorden is the NE extension of Rovdefjorden.

5.51 Rovdeskjeret Light (62°11'N., 5°45'E.) is situated on the S side of Rovdefjorden, 3.75 miles E of Saudeholmen Light. There are a number of dangers in the vicinity of this light.

There is anchorage available off Knarrdal, Little Rovde, and Sundnesbogen, which lie 0.4 mile E, 0.9 mile E, and 1.5 miles ENE, respectively, from Rovdeskjeret Light, in depths up to 33m, sand. When approaching these anchorages from the W, it is advisable to keep well N of the dangers in the vicinity of Rovdeskjeret Light.

Vessels may keep Stabbane Light astern, which leads into the W part of Rovdefjorden. Pass S of Saudeholmen Light, then steer ENE with the white sector of that light bearing astern. Vessels may continue E, with the white sector of Ysnoya Light bearing ahead.

When about 2 miles WSW of Ysnoya Light, alter course to the E, then steer NNE to pass between Ysnoya Light and the dangers 1 mile E, and enter Vartdalsfjorden.

Syvdsfjorden extends 6 miles SSE from Rovdefjorden in a position 1.5 miles SE of Saudeholmen Light.

5.52 Voldsfjorden (62°12'N., 5°56'E.) extends 9.25 miles SSE from its entrance at the E end of Rovdefjorden. Its two inner arms, Dalsfjorden and Austefjorden, are deep and clear of dangers.

An ammunition dump is situated close within the entrance to Voldsfjorden.

Vartdalsfjorden leads 10 miles NE toward Sulefjorden. It is flanked by high, partly-wooded mountains. The fjord is deep, and almost everywhere steep-to up to the shore. It is easy to navigate by day.

Vessels may enter Vartdalsfjorden with the white sector of Ysnoya Light astern. After passing **Skolten** (62°16'N., 6°00'E.), a 2m patch, keep Ysnoya Light bearing 222° astern. This leads through the NE part of Vartdalsfjorden.

Orstafjorden (62°14'N., 6°00'E.) leads off the SE side of Vartdalsfjorden and extends 5 miles SE. It is surrounded by mountains and is almost free of dangers.

Raudoy and Raudoyholmen, close E, lie in the entrance to Orstafjorden. **Raudoy Light** (62°14'N., 5°59'E.) is situated on Raudoyholmen. Vessels can anchor, in 25 to 40m, sand, 0.25 mile NW of Raudoy Light.

Vessels may enter with the white sector of Ysnoya Light bearing astern, which leads S of Raudoy. The white sector of Raudoy Light bearing astern, leads to the vicinity of Lianes, about 2 miles SSE.

Orsta (62°12'N., 6°08'E.) ([World Port Index No. 23118](#)) lies at the head of Orstafjorden. It is the site of several industries. There are several quays, one being 61m in length. There are depths alongside the quays from 1.7 to 7m.

Anchorage is available SW of the quays, in 15 to 45m, sand and mud.

5.53 Indreleia continues through Sulefjorden, between Hareidlandet and Sula, from the junction of Vartdalsfjorden and Storfjorden, into Breisundet.

Hjorungneset Light (Hjoringnes Light) (62°21'N., 6°07'E.), stands on the NE end of Hjorungneset. This light is situated on the S side of the E entrance to Sulefjorden. A monument/cairn is located a little over 1 mile WNW of Hjorungneset Light.

Overaflu, a reef awash, lies 0.15 mile offshore, 1 mile NW of Hjorungneset.

Eltranaset (62°26'N., 6°03'E.), the W extremity of Sula, is fronted by a shore reef which extends about 0.2 mile SW. Eltraflu, about 0.2 mile N of Eltranaset, has a least depth of 10m.

Hareid (62°22'N., 6°02'E.) ([World Port Index No. 23112](#)), situated on the SW side of Sulefjorden, 2.25 miles WNW of Hjorungneset, is protected by two moles. The dredged depth inside the harbor was 5m; the depths alongside the quays ranged up to 6m.

Brandal (62°24'N., 6°01'E.) is a small harbor about 2 miles NNW of Hareid. There is a ferry quay, 35m long, with depths of 1.7 to 4.6m alongside; a fish oil quay, 108m long, with

depths of 4 to 7.8m alongside; and a disused factory quay, 110m long, with depths of 2.9 to 4.2m alongside.

5.54 Storfjorden, with its continuations, extends about 55 miles SE from the junction of Vartdalsfjorden and Sulafjorden.

The terrain alternates between wild mountain areas and productive lowlands and valleys.

Storfjorden extends ENE about 18 miles to **Gausneset** (62°28'N., 6°46'E.), then in a general SSE direction about 14 miles to its continuation as Norddalsfjorden.

Hjorundfjorden, with its two inner arms, Norangsfjorden and Storfjorden, is entered from a position 7.25 miles ENE of Hjorungnes Light. These fjords extend 18 miles in a SSE direction. They are surrounded by high mountains which fall steeply to the water.

5.55 Sykkylvfjorden (62°24'N., 6°33'E.) is entered 4 miles E of Hjorundfjorden. Anchorage is available 2.5 miles within the entrance near the middle of the fjord, in depths of 28 to 35m. A bridge, with a vertical clearance of 16m, spans the fjord about 0.3 mile N of Vik.

At Sykkylven, 1.5 miles within the fjord on the E side, there are quays, exposed to W winds, with depths up to 7.5m alongside.

At Ikornes, on the W side of the fjord SW of Sykkylven, there are depths up to 7.2m alongside the quays.

Stordalsvika (62°23'N., 6°58'E.) opens off the E side of Storfjorden, 6.75 mile SSE of Gausneset. Stordal, at the head of the bay, has berths with 1.1 to 10.3m alongside. Anchorage is available in the NE corner of Stordalsvika, in 16 to 27m, mud.

Stranda (62°18'N., 6°57'E.), on the W side of Storfjorden, about 4 miles SSW of Stordalsvika, is the principal town in the inner part of the fjord. There are several berths at the various quays that range in depth from 1.4 to 7.7m.

Strong winds raise considerable seas and make berthing difficult at the quays.

5.56 Sunnylvsfjorden extends 13 miles SSW from its junction with Storfjorden and Norddalsfjorden.

Geirangerfjorden leads about 7 miles E from the SE side of Sunnylvsfjorden between **Lundanes** (62°07'N., 6°58'E.) and Nokeneset, 0.75 mile SW.

Both of these fjords are deep and clear of dangers, but navigators are advised to keep well out into the center owing to the risk of rock falls from the precipitous mountains.

Hellesylt (62°05'N., 6°53'E.), at the head of Sunnylvsfjorden, has a quay 32m long, with depths of 5.6 to 8.0m alongside.

Vessels may anchor, in 28 to 68m, sand, 0.2 mile NE of the church.

Geiranger (62°06'N., 7°12'E.) lies at the head of Geirangerfjorden, 8 miles E of Lundanes. The S side of the ferry quay is available for berthing and is 50m long, with depths of 3.5 to 8.4m alongside.

Anchorage is available, in depths of up to 50m, sand, within 0.45 mile of the head of the fjord.

Care is necessary to avoid submarine cables which are laid along the SW shoreline and the cables which extend across the



Geiranger

fjord in a N direction from the S shore in a position 0.85 mile NW of the quay.

5.57 Norddalsfjorden leads E from the SE end of Storfjorden and then in to Tafjorden. Both fjords are deep and present no navigational difficulty.

There is anchorage off **Tafjorden** (62°14'N., 7°25'E.), at the head of the fjord, in 30 to 50m, sand and clay, clear of the banks at the river mouth.

Sandsfjorden (62°15'N., 5°31'E.) is an alternate route from the sea to Rovdefjorden and the inner route to Alesund. This fjord lies between Sandsoy, and the islands extending S from this island, on the W, and Gurskoy on the E.

From Sondre Flavaerleia, a S course in mid channel avoids all dangers and leads clear E of **Kleveboen** (62°16'N., 5°30'E.), a 2.3m patch lying off the NE point of Sandsoy.

The white sector of Stabbane Light, bearing ahead, leads toward the S end of Sandsfjorden. The white sector of **Sandshamn Light** (62°15'N., 5°30'E.), bearing astern, leads SSE into the W entrance of Rovdefjorden.

Sandshamn, a harbor protected by a mole, is situated on the E side of Sandsoy. There is a berth on the inner side of the mole 25m long, with depths of 8.4 to 10.3m alongside.

Gursken, a narrow inlet, is entered with the white sector of Sandshamn Light, bearing astern. Saltflu, awash, lies in this sector about 3 miles distant from the light. Lights in range lead N of this danger and then SE to the head of the inlet.

Vagen (62°13'N., 5°39'E.) lies at the head of Gursken, where there is a shipyard. There is a fitting out quay at the shipyard, 60m long, with depths of 3.5 to 7m alongside.

5.58 Breisunddjupet, which has depths of over 200m, leads 8 miles SE from position 62°31'N, 5°40'E into Breisundet.

A number of shoals and patches lie between Runde and the S side of Breisunddjupet. Nyttarsskallane, with a depth of 24m, and Golla, three patches of 9m each, lie 3.5 miles NNW and 3 miles NNE, respectively, from Runde Light.

Heavy seas have been observed in the Breisunddjupet and Breisundet area with winds from the W and NW. The outgoing

current is approximately 1 knot from Storfjorden and causes choppy waves and heavier seas.

Refraction centers will occur on the leeward side of the local shoal areas on both sides of Breidsunddjupet.

Vallabaane (62°28'N., 5°41'E.), with a least depth of 2.4m, and Keipbaane, with a least depth of 7m, lie 3.5 miles NNW and 4 miles NNW, respectively, from Grasoyane Light. Other shoals lie in this area. An 18m depth is charted 1.25 miles ENE of Vallabaane.

Heroyfjorden lies between Sandsoy and Gurskoy on the S, and Skorpa, Nerlandsoy, Bersoy, and Leinoy on the N.

In Heroyfjorden, there are many islets separated by rock-obstructed channels, which in places are narrow. The three principal channels through these dangers are Sondre Flavaerlia, Mellomste Flavaerlia, and Nordre Flavaerlia, which are collectively known as Flavaerlia.

These channels lead to the intricate passages which lead N of Gurskoy and NW of Hareidlandet into Breisundet. Some of these channels can only be used by small vessels with local knowledge.

Heroyfjorden may be approached with the white sector of **Flavaer Light** (62°19'N., 5°35'E.) bearing ahead, which leads N of Stadlandet; however, this track leads over charted depths of 30m. A racon is located at the light tower.

5.59 Sondre Flavaerlia leads between the N side of Sandsoy and a group of islets, rocks, and shoals about 1 mile N.

Flesene (62°17'N., 5°27'E.), marked by an iron perch, lies near the W end of this group.

Sandsfjorden, previously described, may be entered from Sondre Flavaerlia.

The white sector of **Hidsneset Light** (62°17'N., 5°33'E.), at the W end of Gurskoy, leads S of Flesene and N of the foul ground extending NW of Sandsoy.

Sondre Flavaerlia then passes NE. The white sector of Hidsneset Light, bearing astern, leads W of Langflu, which lies 1 mile NNE of that light, and W of Blomrokkene, which lies 0.45 mile NE of Langflu, and into the E end of Mellomste Flavaerlia.

The white sector of **Klubben Light** (62°19'N., 5°37'E.), situated at the SE end of the Flavaer Group, bearing ahead, leads S of Langflu.

From E of Langflu, Sondre Flavaerlia leads ENE to pass between Klubben Light and an iron perch which marks Kvalebaen, a 3m patch, 0.2 mile S.

The white sector of Steinsholmskjer Light, 1.25 miles ESE of Klubben Light, bearing ahead, leads between Klubben Light and Kvalebaen.

Mellomste Flavaerlia leads ENE directly toward the Flavaer Group. This channel is entered as directed for Heroyfjorden.

The sea sometimes breaks over Hoven, the 30m patch lying about 1 mile N of Sandsoy, near the entrance to Mellomste Flavaerlia.

After passing **Penningflu** (62°19'N., 5°33'E.), 0.8 mile WSW of Flavaer Light, course may be altered N to join Nordre Flavaerlia, or E to join Sondre Flavaerlia, by steering in the white sector of Steinsholmskjer Light.

Nordre Flavaerlia leads ENE, passing S of Skorpa and Nerlandsoy.

The white sector of Kyrkjeholmen Light, leads between Langfallet, partly awash, and Store Godoyflu, at the W entrance of Nordre Flavaerlia. When within 0.5 mile of Kyrkjeholmen Light, steer in an E direction to pass N of the Flavaer Group, then steer SE with the white sector of Kyrkjeholmen Light as tern, which leads into the inner part of **Heroyfjorden**.

Tronden (62°19'N., 5°38'E.), above-water, lies in this white sector, about 0.5 mile E of Klubben Light.

Well-sheltered anchorage is available in a bay off **Moldtu** (62°18'N., 5°38'E.), on the N coast of Gurskoy, in 20 to 30m, sand. The anchorage lies 0.9 mile SSE of Klubben Light, and is entered from the E end of Sondre Flavaerlia.

Moldtustranda (62°18'N., 5°39'E.) ([World Port Index No. 23115](#)) is entered SSE of Steinsholmskjer Light, and lies E of Moldtu. There are several quays in Moldtustranda, with lengths from 10 to 130m and depths up to 10m alongside.

There is a fish meal factory with a large quay installation.

Vessels approaching from seaward may embark pilots at the pilot station NE of Runde. Customs officers from the port of Alesund meet incoming vessels at the above pilot station.

Breisundet

5.60 Heissafjorden (62°27'N., 6°08'E.) leads 2.5 miles E from Breisundet into Borgundfjorden; at its E end gives access to Aspevagen, which is the principal entrance to Alesund Havn.

Alesund Havn (62°28'N., 6°09'E.) consists of Aspevagen, S of Aspoya; Steinvagsundet and Steinvagen, W of Aspoya; and Indre Havn, E of Aspoya.

Aspevagen is entered E of Slinningen, the E extremity of Heissa; it is the principal entrance to Alesund Havn.

Submarine cables are laid from Slinningsodden, the NE extremity of Slinningen, NE to Norvoya.

Aspa (62°28'N., 6°09'E.), a reef awash, lies in the middle of Aspevagen.

Vikanesflu Light (62°28'N., 6°07'E.) is situated in the SW part of Aspevagen. The white sector of this light bearing between 262° and 269° leads from N of Slinningen, S of Aspa to the anchorages in the S part of Aspevagen. A depth of 9.1m lies in this white sector.

Anchorage may be taken, in 30m, 0.35 mile ESE of Vikanesflu Light and, in 36m, 0.7 mile ESE of the same light.

There is a quay at the tank installation on the S shore of Aspevagen, about 0.2 mile SE of Vikanesflu Light, which is 75m long and has depths of 6.5m alongside.

5.61 Hoggsteinen Light (62°28'N., 6°02'E.) is situated off the SE extremity of Godoya, on the NE side of Breisundet.

Djupeflua, with a charted depth of 12m, lies 0.3 mile SSE of the light. Skarvoyflua, a 5m patch which breaks in bad weather, lies about 1 mile E of the light.

Nordtaren, with a least charted depth of 7.5m, lies about midway between Heissa and Godoya, 1 mile ENE of Hoggsteinen Light.

To enter Valderhaugfjorden, which lies N of Alesund, steer in the junction of the red and green sectors of **Havsteinen Light** (62°29'N., 6°04'E.). This track leads over Djupeflua and W of Nordtaren.

When W of Erkneflua, which lies close N of Nordtaren, steer NE with the white sector of Hoggsteinen Light astern, This will lead to a position NW of Alesund.

Foul ground extends about 0.2 mile N from the NE extremity of Heissa. Steer a SE course from the white sector of

Hoggensteinen Light to pass E of this foul ground, to the berths on the N side of Alesund.

Olsskjer, a partly submerged reef, lies on the N side of the fairway, about 0.5 mile N of Aspoya Olsskjerboen, a 3m shoal, lies 0.15 mile ENE of this reef.